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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,032	01/26/2001	Eric K. Wilson	23600.01301	8072

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EXAMINER	
JACKSON, BLANE J	

ART UNIT	PAPER NUMBER
2685	6

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/771,032	WILSON, ERIC K.	
	Examiner	Art Unit	
	Blane J Jackson	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodworth et al. (U.S. Patent 4,876,737) with a view to Starband (User Guide #STR-001-5.21).

Note: Unfortunately, the prior art does not discuss all elements of the figures and confuses identification for components and ports between figures; however, the Office has made every effort to identify relevant information with reasonable interpretation.

As to claims 1 and 2, Woodworth teaches an electronic module for use in a wireless modem system including:

A wireless modem having an enclosure (figure 1 shows the transmit/ receive portions of the station and figure 2 shows the baseband and upconversion circuits, figure 6 the downconversion circuits, figure 4, the control panel and figures 5a, 5b microprocessor board used for both the transmitting and receiving circuits, column 1, lines 40-55),

A power inserter circuit contained within the modem enclosure (figure 6, S2 BDC Switch 308 applies +22 VDC to board (212) to output to the LNB at port J2 for 950-1700 Mhz input from the receive LNB, column 11, lines 21-24, and figure 7, inductor L22 connects power at Rfin port J1 and capacitor C58 blocks VDC from following circuit, column 11, lines 33-40,

A power source electrically connected to the modem and the power inserter circuit (figure 2, power supply (34) to motherboard (36) and figure 6a, power supply connector J1 with multiple outputs, but +22 VDC connected at E3 and E4 to figure 6 to drive inserter at receive port J2, RF in),

An output connector connected to the modem and the power inserter circuit (figure 7, connector J1 Rfin),

Wherein the output connector connects to an external *converter (LNDC)* and supplies electrical power to and an electrical signal from the *converter* (figure 1, LNDC (18) with (coaxial) connection to output connector J1 at TDC (26), output connector J1 detailed with power inserter in figure 7, column 11, lines 21-40).

Woodworth, as described above, specifically shows the typical application of a power inserter included within the housing of a modem or receiver but does not teach a similar design in the transmit chain; therefore, Woodworth does not show where the output connector connects to an *external transverter.*

The home Starband system shows a satellite system where the receive block down conversion/ receive and the signal upconversion/ transmitter components are mounted on the feed arm of an external antenna (the external transverter) with coaxial

direct connection to an indoor modem. The cable connections of this Starband system necessarily carry compatible VDC power out to the antenna mounted transmit/ receive conversion and amplification circuits with simultaneous RF signals (pages 12, 18 and 19). Also, this system can attach a LNBF to amplify and down convert satellite television signals to an indoor receiver where the television receiver inserts VDC to drive the outdoor LNBF in the same manner as taught by Woodworth, a method well known in the art.

Since Woodworth teaches power insertion on coaxial cable to drive the receive amplification and downconversion circuits located at the antenna for advantages well known in the art, it would have been obvious to one of ordinary skill in the art at the time of the invention to similarly position the transmit upconversion and amplification equipment of Woodworth at the antenna supported by power insertion on the transmission line as taught by Starband for similar advantages: to minimize signal losses due to a lower frequency band transmitted through the intervening coaxial cable between the modem and converter and minimize power loss between the (power) amplifier and antenna (for maximum effective radiated power).

As to claims 3-7, Woodworth teaches the power source is an AC to DC power supply with three outputs: 8 volts, -22 volts and +22 volts followed by DC-DC converters to yield +5, -15, +15 and retain +22 volts. (Figure 6a, the motherboard interconnect diagram where this board may be used for both transmit and receive circuits, shows a J1 Power Supply connector and converters not discussed in the Specification). The

Office interprets this J1 Power supply to source all electronics including the remote converter via the power injector and considering the power supply of figure 7 as an option since it is not needed nor discussed in the prior art Specification. Therefore, it would have been obvious to any one skilled in the art at the time of the invention to implement a suitable power supply with DC-DC conversion as taught by Woodworth to match system circuit load requirements.

As to claim 8, Woodworth teaches a wireless modem system comprising:

A wireless modem having an enclosure (figure 1 shows the transmit/ receive portions of the station and figure 2 shows the baseband and up conversion circuits, figure 6 the down conversion circuits, figure 4, the control panel and figures 5a, 5b microprocessor board used for both the transmitting and receiving circuits, column 1, lines 40-55),

A power inserter circuit contained within the modem enclosure (figure 6, S2 BDC Switch 308 applies +22 VDC to board (212) to output to the LNB at port J2 for 950-1700 MHz input from the receive LNB, column 11, lines 21-24, and figure 7, inductor L22 connects power at Rfin port J1 and capacitor C58 blocks VDC from following circuit, column 11, lines 33-40),

A power source electrically connected to the modem and the power inserter circuit (figure 2, power supply (34) to motherboard (36) and figure 6a, power supply connector J1 with multiple outputs, but +22 VDC connected at E3 and E4 to figure 6 to drive inserter at receive port J2, RF in),

A DC to DC converter contained within the enclosure electrically connected to the power source and the modem (figure 6a, the motherboard interconnect diagram with the +22 volts converted to +15 volts, test point 3 (TP3) for connection to the "modem" circuits),

An output connector connected to the modem and the power inserter circuit (figure 6, RF in port J2 or figure 7, connector J1, RF in, +22 VDC output, E8 and E7 supply power to the power inserter alone, not other circuits),

A *low noise down converter (LNDC) or converter* electrically connected to the output connector (figure 1, LNDC (18) to Tracking Down converter (TDC) (26) (figure 1, LNDC (18) with (coaxial) connection to TDC (26) and the output connector is J1 of figure 7, column 11, lines 21-40).

Wherein the *converter* receives DC power from the power inserter circuit along with an electrical signal from the modem and the power inserter circuit isolates the modem components from the DC power sent to the *converter* and isolates the power source from the electrical signal sent to the *converter* (this is a description of the well known bias T or power inserter shown at the connector J1, figure 7, key components C58 to block VDC passing into the modem but passing the RF frequency band and inductor L22 blocking the RF frequency band from the power source but passing the VDC current).

Woodworth, as described above, specifically shows the typical application of a power inserter included within the housing of a modem or receiver but does not teach a similar

design in the transmit chain; therefore, Woodworth does not show where the output connector connects to an *external transverter*.

The home Starband system shows a satellite system where the receive block down conversion/ receive and the signal up conversion/ transmitter components are mounted on the feed arm of an external antenna (the external transverter) with coaxial direct connection to an indoor modem. The cable connections of this Starband system necessarily carry compatible VDC power out to the antenna mounted transmit/ receive conversion and amplification circuits with simultaneous RF signals (pages 12, 18 and 19). Also, this system can attach a LNBF to amplify and down convert satellite television signals to an indoor receiver where the television receiver inserts VDC to drive the outdoor LNBF in the same manner as taught by Woodworth, a method well known in the art.

Since Woodworth teaches power insertion on coaxial cable to drive the receive amplification and down conversion circuits located at the antenna for advantages well known in the art, it would have been obvious to one of ordinary skill in the art at the time of the invention to similarly position the transmit up conversion and amplification equipment of Woodworth at the antenna supported by power insertion on the transmission line as taught by Starband for similar advantages: to minimize signal losses due to a lower frequency band transmitted through the intervening coaxial cable between the modem and converter and minimize power loss between the (transmit power) amplifier and antenna (for maximum effective radiated power).

As to claim 9, Woodworth teaches the DC to DC convert outputs a constant voltage to the modem regardless of a change in input voltage from the power source (Figure 6a, the converters or regulators regulate the output voltage despite small changes in the input voltage as is well known in the art).

As to claim 10, Woodworth teaches a regulated power supply system with the obvious intention to meet load requirements (figure 6a).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Van Amesfoort (U.S. Patent 6,075,970) discloses a satellite receive having a switchable power supply and power inserter to drive the remote LNC. Vizer (U.S. Patent 5,893,023) discloses a satellite receiver including an adjustable DC converter wit power inserter to drive the different load requirements of a remote signal converter. Davi et al. (U.S. Patent 6,211,844) discloses and dual LNB/TV antenna receiving system where the external DC block adapter or power inserter for the local amplified TV antenna is not required, the VDC power provided through the multi switch and sourced at the receiver. Spruell et al. (U.S. Patent 6,549,091) teaches an antenna coupler where the active components receive VDC power tapped from the connecting coaxial cable sourced by the connected receiver. Dillon (U.S. Patent 5,699,384) discloses a satellite receiver on a computer adaptor card with DC converter to drive card electronics and power insertion to remote antenna.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J Jackson whose telephone number is (703) 305-5291. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BJJ

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